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034001

70 - 606.

END OF SEASON REPORT

ZEEHAN BASE METAL PROSPECT,

TASMANIA

NOVEMBER, 1969 - MARCH, 1970

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ZEEHAN BASE METAL PROSPECT (JOB NO. 118)

END OF SEASON REPORT - NOVEMBER, 1969 - MARCH, 1970.

INTRODUCTION

The full details of exploration work carried out in the previous season are contained in a report by Sharwood, dated 30th May, 1969.

Briefly an area of about 19 square miles was acquired for exploration. Although not generally accepted as an effective reconnaissance tool under these climatic conditions a stream sediment geochemical survey was carried out. This revealed two anomalies of promise on which work was carried out this season.

Anomaly No. 1. This anomaly was located approximately 900 feet above the general level of the country on the steep slopes of Mt. Dundas. A number of sediment samples taken from the creeks in the area assayed up to 450 ppm Pb.

Access to the anomaly was difficult entailing a long arduous climb until a road was bulldozed from Howards Private Road to within 300 feet of the anomaly. This enabled a four wheel drive vehicle to reach the anomaly in fifteen minutes instead of the two hour climb on foot.

Grid and Pegging. Unfortunately in the early days of follow up soil sampling no systematic grid system was ever introduced. A base line does exist but the distance between cross lines is not constant and the line numbering system is haphazard.

As work progressed a point was reached where the cost of recutting, pegging and resampling the area on a properly laid out grid was not justified and it was felt that continuing the present system with all its drawbacks would be better. All crosslines were surveyed and plotted in their true position.

Soil sampling. The soil sampling was carried out along the lines with the sample being taken at a depth of about 12" - 18". This was usually below the level of organic contamination but occasionally some samples carried appreciable organic matter.

The samples were dried in ovens at 110°, crushed and screened with the minus 80 mesh fraction being submitted for analysis. Much of the organic matter was removed in this process. The samples were analysed by McPhar Geophysics Pty. Ltd., using A.A.S. and a standard perchloric acid leach.

Results. The results when plotted show a well defined lead anomaly measuring in excess of 400 feet long. The soil values ranged up to 600 ppm whereas the normal background values are in the 75 - 100 ppm range. A down slope dispersion pattern carries irregular values for 400 - 500 feet. This pattern suggests that the values are being shed from a linear structure on the western side of the ridge . It appears to strike north south and could represent a narrow vein of mineralisation underlying the soil and scree slope.

Geology. The rock types in the anomalous area have not been mapped closely due to the poor outcrop and soil cover. However, the sections visible in the creeks on the down slope side of the anomaly are tuffaceous with interbedded shale horizons. This type of lithology could be expected to occur closer to the ridge.

Self Potential Survey. An attempt to run a self potential survey over the anomaly did not meet with success. Initially troubles were encountered with the equipment (McPhar) and later with the operators. The results were not plotted.

CONCLUSIONS AND RECOMMENDATIONS

(1) The stream sediment geochemical results have been confirmed by a well defined lead anomaly measuring over 400 feet in length and of an intensity about 5 - 6 times background.

(2) The anomaly is in a black shale/tuff environment and could be due to a narrow vein (s) of mineralisation striking N/S.

(3) The S.P. survey conducted over the anomaly failed to produce anomalous results. This is not discouraging as the results of the S.P. survey are suspect.

(4) The anomaly will have to be tested with other geophysical methods and if meaningful results are obtained then the anomaly will have to be drilled in an effort to discover the source of the lead values.

(5) It should be noted that I.P. may or may not be applicable in this area. The interbedded black shales could be graphitic which would lead to misleading results.

(6) With the thin cover of weathered rock sulphides would be expected to occur within a few feet of the surface. Should the source of anomalous values be due to mineralisation, useful information could be gained by carrying out an electromagnetic survey.

MARIPOSA AREA

A reappraisal of the geochemical results from the creek just to the north of Mariposa Hill prompted investigation of the north western corner of the S.P.L.

Although not within the northern boundary of the S.P.L. an inspection of a section of the creek indicated that the high lead values could be being shed from an outcrop of weathered Gordon Limestone directly along the strike of the old Mariposa mine. The limestone had been prospected and explored by a number of adits and costeans. When pulverised and panned off the limestone yielded small amounts of galena and other sulphides.

This led to further exploration and research concerning the old Mariposa deposit and the possibilities of extending the known ore reserves.

MARIPOSA MINE - HISTORY AND EXPLORATION

The Mariposa mine workings are located approximately 1,000 feet south of the northern boundary of the S.P.L. and 2,000 feet south of the adits in the limestone mentioned above.

The mine operated around the turn of the century for a short time and has since lain idle.

The mine was investigated by Zeehan Explorations Pty. Ltd. around 1950 - 1951 and was drilled extensively. Two lenses of mineralisation measuring 460 feet and 150 feet long with widths of 5 to 6 feet and 4 feet respectively. Total tonnage was estimated at 100,000 tons assaying 7.9% Pb, 1.3% Zn and 4.0 oz. Ag.

At the time the mine was not developed because of expected water problems and the lack of cheap electricity for pumping purposes.

All of the Z.E.P.L. exploration was concentrated around the immediate mine area. No exploration to the north or south appeared to have been carried out.

Exploration 1969 - 1970

The previous years stream sampling programme had led to the discovery of adits near a small creek 1,400 feet S.S.E. of the mine suggesting that the length of the zone over which mineralisation might occur would be at least 3,500 feet. With both these facts - an old mine with proved reserves of 100,000 tons in a mineralised zone 3,500 feet long it was decided to explore the area concentrating on possible strike extensions.

The area of interest was covered by a grid measuring 2,600 feet N.S. by approximately 1,800 feet E.W. The base line was located on a flat semi marshy button gross plain. Traverse lines were cut every 200 feet and were pegged at 100 feet intervals.

Although Z.E.P.L.'s exploration had been carried out twenty years earlier, sufficient of their line pegs were identifiable allowing both grids to be tied in.

The area was covered with a soil sampling programme and later a self potential survey.

Geology. The two rock types in the mine area govern the present topography strongly. The soft, easily weathered Gordon Limestone is reflected by the button grass swamp and the more resistant Crotty Sandstone forms the hill to the west of the mine.

The mineralisation is associated with a faulted contact between the two rock types and occurs in the limestone.

Soil sampling. A soil sampling programme was carried out over that part of the grid not underlain by swamp. The samples were taken from a depth of 12" - 18" and were dried, screened to minus 80 mesh and sent for analysis.

Results : Initial batches of soil samples were assayed for Cu Pb and Zn but later samples were assayed for Pb only. In general Cu values were too close to the limit of detection of the analysis to be meaningful, while the zinc values would be too mobile in this environment to be of much use.

The Pb assay contour map (Plate 7) shows no clear pattern, although a number of weak anomalies exist reflecting the general strike of the underlying rocks.

A number of erratic values can be seen occurring near old workings. As cerussite can be picked up on many of the mine dumps these values can be attributed to contamination.

On the far western limit of the grid occasional strongly anomalous values were recorded. These samples were taken near the creek which itself carries very high values of lead and zinc. Again the high assays from the soil samples would be due to contamination from the creek in times of flooding.

Self Potential Survey

The self potential survey covered the whole area in an effort to discover the effectiveness of the method.

The unit used was the current McPhar model. Voltage variations were taken every 100 feet and the results plotted and contoured.

Results : The contoured data suggests that the method is of little use in detecting sulphide mineralisation in this environment. No anomalies were found above the old workings or adjacent to the positions of the Z.E.P.L. drill holes. However, a strong anomaly was found to occur over the Crotty Sandstone. The intensity of the anomaly corresponds closely to the topography (i.e. the higher the hill the greater the anomaly). As no anomaly of this size could be due to mineralisation it is probably a lithological phenomenon.

CONCLUSIONS AND RECOMMENDATIONS

Although the exploration methods implemented so far have failed to give encouragement or have been inconclusive, the Mariposa area still represents the major region of interest in the S.P.L.

It is suggested that further geophysical work (induced polarisation) be carried out on the prospect with the hope of delineating drill targets along the ore structure.

However, in recommending further work on the Mariposa (and No. 1 Anomaly) the limitations of the exploration budget in relation to the financial returns must always be considered.

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The ore reserves at the Mariposa could be increased on a most optimistic basis say from two to five times. Even so the total tonnage available then would only be 200,000 to 500,000 tons. The ore bodies would be narrow and the mining conditions very difficult because of water.

If, after considering these factors the prospect still shows appeal then work should recommence next season. If it does not (also if the No. 1 anomaly is not considered continuing with) then it might be possible to dispose of the areas to other prospecting companies and recoup some of the money spent on the project.

James Pollock

JAMES POLLOCK
18. 7. 70

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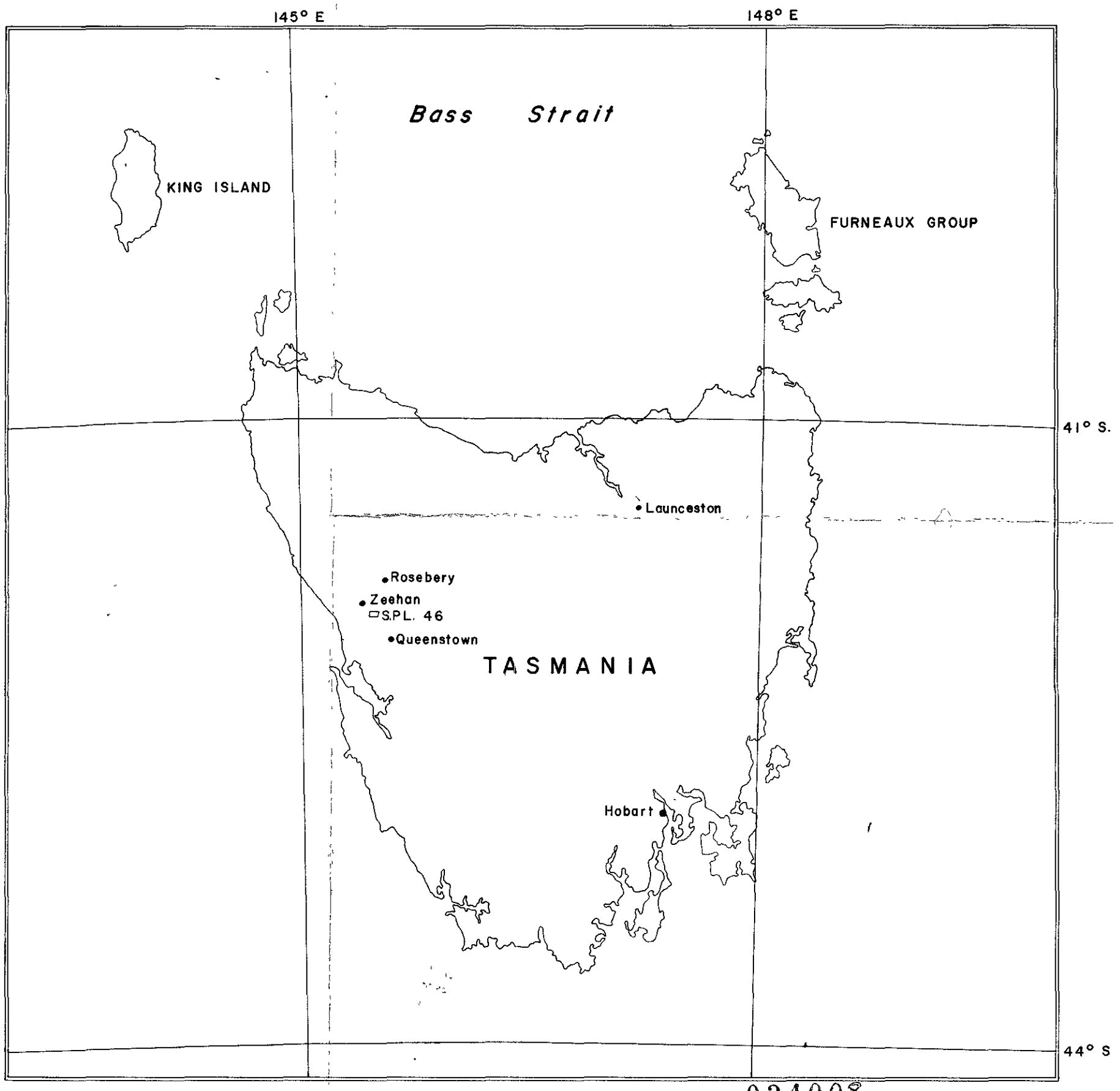
ZEEHAN BASE METAL PROSPECT



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5 cm

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MCINTYRE MINES (AUSTRALIA) PTY. LTD.

ZEEHAN BASE METAL PROSPECT

LOCATION MAP

DRAWN BY: S. Summergreene	DATE: May 1969
JOB NO: 118	SCALE: 1" = 40 miles

FIGURE 1

950/46

3334

3335

3335

MARIPOSA GRID

ANOMALY NO.1 GRID

Mariposa Ck.

Mariposa Falls

Mariposa adits

Mariposa Ck.

Tom Ck.

Berry Ck.

Carvell Rivulet

Mulvaney's bulldog rd.

Old Track

R.J. Howard's Private Road

40000 N

35000 N

30000 N

25000 E

30000 E

35000 E

40000 E

45000 E

50000 E

55000 E

60000 E

Roads
Tracks
Tramway
Rivers
400 Contours interval at 400'
Sample location (Stream sediment)
Rock sample location
Red ferruginous seepage

T.N. M.N.
11° 40'

SCALE
0 ¼ ½ ¾ 1 1¼ 1½ 1¾ MILES

5 cm

Note: This Map is included mainly to show the location of the 2 grids. The stream sediment sampling results were presented previously on a separate.

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MCINTYRE MINES (AUSTRALIA) PTY. LTD.

ZEEHAN BASE METAL PROSPECT

BASE MAP FOR
STREAM SEDIMENT GEOCHEMISTRY

LOCATION OF ANOMALY NO.1 GRID, MARIPOSA GRID

Geologist:	Scale: 1"= ¼ mile approx.
Drafted by: S. Summergreene	Date: December 1968
Job no. 118	Revision: July 1970

FIG. 2

3335

3335

3336

47850 E 48050 E 48250 E 48450 E 48650 E 48850 E 49050 E 49250 E 49450 E 49650 E 49850 E 50050 E 50250 E 50450 E 50650 E 50850 E 51050 E 51250 E 51450 E 51650 E 51850 E 52050 E 52250 E 52450 E 52650 E 52850 E 53050 E 53250 E 53450 E 53650 E 53850 E 54050 E 54250 E 54450 E 54650 E 54850 E 55050 E 55250 E

42100 N 41900 N 41700 N 41500 N 41300 N 41100 N 40900 N 40700 N 40500 N 40300 N 40100 N 39900 N 39700 N 39500 N 39300 N 39100 N 38900 N 38700 N 38500 N 38300 N 38100 N 37900 N 37700 N 37500 N 37300 N 37100 N 36900 N 36700 N 36500 N 36300 N 36100 N 35900 N 35700 N 35500 N 35300 N

ARS 1 ARS 2 ARS 3 ARS 4 ARS 5 ARS 6 ARS 7 ARS 8 ARS 9 ARS 10 ARS 11 ARS 12 ARS 13 ARS 14 ARS 15 ARS 16 ARS 17 ARS 18 ARS 19 ARS 20 ARS 21 ARS 22 ARS 23 ARS 24 ARS 25 ARS 26 ARS 27 ARS 28 ARS 29 ARS 30 ARS 31 ARS 32 ARS 33 ARS 34 ARS 34A ARS 35 ARS 36 ARS 37 ARS 38 ARS 39 ARS 40 ARS 41 ARS 42 ARS 43 ARS 44 ARS 45

034610

5 cm

○ 2011 SOIL SAMPLE

RIVER

5 cm

FIG. 3

70-606

MCINTYRE MINES (AUSTRALIA) PTY. LTD.

ZEEHAN BASE METAL PROSPECT

ANOMALY NO. 1 GRID
SOIL SAMPLE NOS.

GEOLOGIST: M. SHARWOOD	SCALE: 1" = 200'
DRAWN BY: S. SUMMERGREENE	DATE: NOVEMBER 1969
JOB NO: 118	REVISION: JULY 1970

950/46 3336

47850 E 48050 E 48250 E 48450 E 48650 E 48850 E 49050 E 49250 E 49450 E 49650 E 49850 E 50050 E 50250 E 50450 E 50650 E 50850 E 5050 E 51250 E 51450 E 51650 E 51850 E 52050 E 52250 E 52450 E 52650 E 52850 E 53050 E 53250 E 53450 E 53650 E 53850 E 54050 E 54250 E 54450 E 54650 E 54850 E 55050 E 55250 E

42100 N 41900 N 41700 N 41500 N 41300 N 41100 N 40900 N 40700 N 40500 N 40300 N 40100 N 39900 N 39700 N 39500 N 39300 N 39100 N 38900 N 38700 N 38500 N 38300 N 38100 N 37900 N 37700 N 37500 N 37300 N 37100 N 36900 N 36700 N 36500 N 36300 N 36100 N 35900 N 35700 N 35500 N 35300 N

ARS 1 ARS 2 ARS 3 ARS 4 ARS 5 ARS 6 ARS 7 ARS 8 ARS 9 ARS 10 ARS 11 ARS 12 ARS 13 ARS 14 ARS 15 ARS 16 ARS 17 ARS 18 ARS 19 ARS 20 ARS 21 ARS 22 ARS 23 ARS 24 ARS 25 ARS 26 ARS 27 ARS 28 ARS 29 ARS 30 ARS 31 ARS 32 ARS 33 ARS 34 ARS 35 ARS 36 ARS 37 ARS 38 ARS 39 ARS 40 ARS 41 ARS 42 ARS 43 ARS 44 ARS 45

034011

5 cm

CONTOUR INTERVAL - 100 P.P.M.

SOIL SAMPLE

RIVER

5 cm

70-606

MCINTYRE MINES (AUSTRALIA) PTY. LTD.

ZEEHAN BASE METAL PROSPECT

ANOMALY NO.1 GRID

SOIL SAMPLE RESULTS Pb P.P.M.

Q50/46

GEOLOGIST: M. SHARWOOD	SCALE: 1" = 200'
DRAWN BY: S. SUMMERGREENE	DATE: NOVEMBER 1969
JOB NO: 118	REVISION: JULY 1970

FIG. 4

3338

47850 E 48050 E 48250 E 48450 E 48650 E 48850 E 49050 E 49250 E 49450 E 49650 E 49850 E 50050 E 50250 E 50450 E 50650 E 50850 E 51050 E 51250 E 51450 E 51650 E 51850 E 52050 E 52250 E 52450 E 52650 E 52850 E 53050 E 53250 E 53450 E 53650 E 53850 E 54050 E 54250 E 54450 E 54650 E 54850 E 55050 E 55250 E

42100 N
41900 N
41700 N
41500 N
41300 N
41100 N
40900 N
40700 N
40500 N
40300 N
40100 N
39900 N
39700 N
39500 N
39300 N
39100 N
38900 N
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37900 N
37700 N
37500 N
37300 N
37100 N
36900 N
36700 N
36500 N
36300 N
36100 N
35900 N
35700 N
35500 N
35300 N

ARS 1 ARS 2 ARS 3 ARS 4 ARS 5 ARS 6 ARS 7 ARS 8 ARS 9 ARS 10 ARS 11 ARS 12 ARS 13 ARS 14 ARS 15 ARS 16 ARS 17 ARS 18 ARS 19 ARS 20 ARS 21 ARS 22 ARS 23 ARS 24 ARS 25 ARS 26 ARS 27 ARS 28 ARS 29 ARS 30 ARS 31 ARS 32 ARS 33 ARS 34 ARS 34A ARS 34B ARS 34C ARS 34D ARS 34E ARS 34F ARS 34G ARS 35 ARS 36 ARS 37 ARS 38 ARS 39 ARS 40 ARS 41 ARS 42 ARS 43 ARS 44 ARS 45

034012

5 cm

70-606

SOIL SAMPLE

RIVER

5 cm

MCINTYRE MINES (AUSTRALIA) PTY. LTD.

ZEEHAN BASE METAL PROSPECT

ANOMALY NO. 1 GRID

SOIL SAMPLE RESULTS ZN P.P.M.

Ø50/46

GEOLOGIST: M. SHARWOOD	SCALE: 1" = 200'
DRAWN BY: S. SUMMERGREENE	DATE: NOVEMBER 1969
JOB NO: 118	REVISION: JULY 1970

FIG. 5

3338

3339

CROTTY SANDSTONE

LIMESTONE COVERED BY SWAMP

DUNDAS SLATES, MUDSTONES ETC.

D.D.H. 4 (-45°)
D.D.H. 5 (-45°)
D.D.H. 6 (-45°)
D.D.H. 8 (-45°)
D.D.H. 7 (-45°)
D.D.H. 9 (-45°)
D.D.H. 10 (-45°)

BASELINE

034013

5 cm

---⊙ D.D.H. 4	DIAMOND DRILL HOLES OF ZEEHAN EXPLORATIONS PTY. LTD.
W.16 W.12 W.8 W.4 E.4 E.8 E.12 E.16	Z.E.P.L. SECTION LINES
	CUT LINE
↑60°	ANGLE OF DIP
	GEOLOGICAL BOUNDARY
	BULLDOZED ROAD
	RIVER
	COSTEAN
	ADIT

5 cm

FIG. 6

70-606

MCINTYRE MINES (AUSTRALIA) P/L.

ZEEHAN BASE METAL PROSPECT

MARIPOSA GRID

950/46

GEOLOGIST: J. POLLOCK	SCALE: 1" = 100 feet
DRAFTED BY: S. SUMMERGREENE	DATE: JULY 1970
JOB NO: 118	REVISION:

3339

3340

30600 E 30700 E 30800 E 30900 E 31000 E 31100 E 31200 E 31300 E 31400 E 31500 E 31600 E 31700 E 31800 E 31900 E 32000 E 32100 E 32200 E 32300 E 32400 E 32500 E 32600 E 32700 E 32800 E 32900 E 33000 E 33100 E 33200 E 33300 E 33400 E 33500 E 33600 E 33700 E 33800 E 33900 E 34000 E 34100 E 34200 E 34300E

41800 N 41700 N 41600 N 41500 N 41400 N 41300 N 41200 N 41100 N 41000 N 40900 N 40800 N 40700 N 40600 N 40500 N 40400 N 40300 N 40200 N 40100 N 40000 N 39900 N 39800 N 39700 N 39600 N 39500 N 39400 N 39300 N 39200 N 39100 N 39000 N 38900 N 38800 N 38700 N 38600 N 38500 N 38400 N

CONTOUR INTERVAL = 50 P.P.M.

5 cm

034614 70-606

MCINTYRE MINES (AUSTRALIA) PTY. LTD.

ZEEHAN BASE METAL PROSPECT

SOIL SAMPLE RESULTS 'Pb'

MARIPOSA GRID

GEOLOGIST: J POLLOCK	SCALE: 1" = 100'
DRAFTED BY: S SUMMERGREENE	DATE: MARCH 1970
JOB NO: 118	REVISION: JULY 1970

5 cm

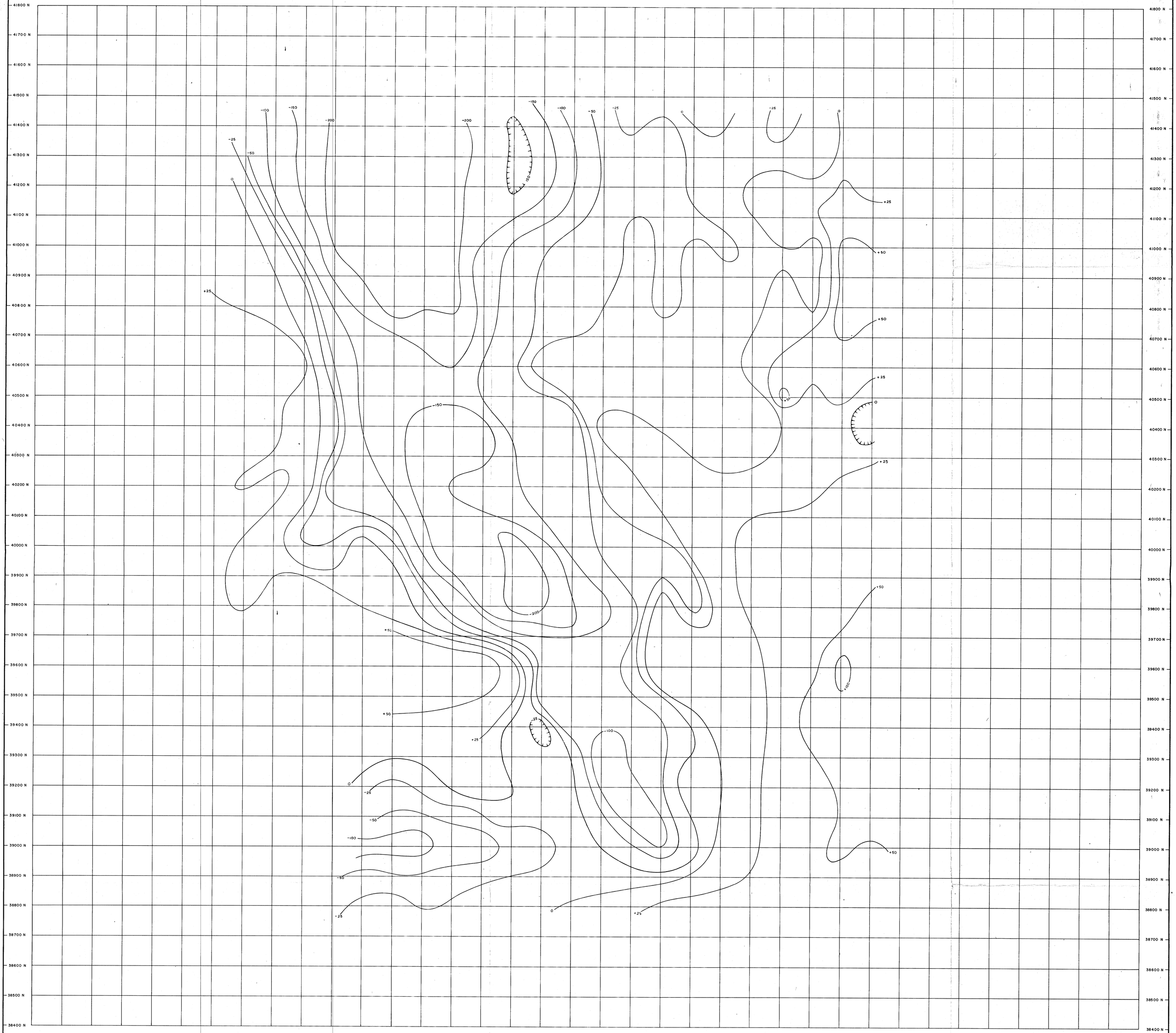
FIG. 7

3340 @50/46 - 70/606

3341

30600 E 30700 E 30800 E 30900 E 31000 E 31100 E 31200 E 31300 E 31400 E 31500 E 31600 E 31700 E 31800 E 31900 E 32000 E 32100 E 32200 E 32300 E 32400 E 32500 E 32600 E 32700 E 32800 E 32900 E 33000 E 33100 E 33200 E 33300 E 33400 E 33500 E 33600 E 33700 E 33800 E 33900 E 34000 E 34100 E 34200 E 34300 E

41800 N 41700 N 41600 N 41500 N 41400 N 41300 N 41200 N 41100 N 41000 N 40900 N 40800 N 40700 N 40600 N 40500 N 40400 N 40300 N 40200 N 40100 N 40000 N 39900 N 39800 N 39700 N 39600 N 39500 N 39400 N 39300 N 39200 N 39100 N 39000 N 38900 N 38800 N 38700 N 38600 N 38500 N 38400 N



034015

5 cm

70-606

MCINTYRE MINES (AUSTRALIA) PTY. LTD.	
ZEEHAN BASE METAL PROSPECT	
SELF POTENTIAL CONTOURS	
MARIPOSA GRID	
GEOLOGIST: J. POLLOCK	SCALE: 1" = 100'
DRAFTED BY: S. E. SUMMERGREENE	DATE: MARCH 1970
JOB NO: 118	REVISION: JULY 1970

FIG. 8

5 cm

050/46

3341